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# FLAT PANEL DISPLAY APPARATUS AND MOUNTING APPARATUS THEREIN

## REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of priority under 35 U.S.C. §119(a) of Taiwan Patent Application No. 089220946, filed Dec. 1, 2000.

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to a flat panel display apparatus, and more particularly to a flat panel display screen with a mounting apparatus. According to the present invention, a tube member of the supporting member is pivotally secured to a handle member. As a result, the flat panel display apparatus can be installed on a ceiling or a wall via adjusting the pivot action of the supporting member. A stand member is disposed at an end of the supporting member allowing the flat panel display apparatus to stand on a level.

### 2. Description of the Related Art

Various arrangements for the flat panel display apparatus are mainly focused on the base variations in the prior art. Conventional base structure base for a flat panel display apparatus has a complicated mechanism.

## SUMMARY OF THE INVENTION

In view of the complication of the base structure in the prior art and the limitation of which base for a conventional flat panel display merely serves to stand on a level, the objective of the present invention is to provide flat panel display apparatus with mounting apparatus to overcome the problem. Said flat panel display apparatus comprises a display screen, a connecting member, supporting member and a stand member.

The connecting member is disposed at the edge or the back of the display screen. A supporting member is pivotally secured to the connecting member. The supporting member comprises a first arm portion and a second arm portion where an obtuse angle is formed between the first arm portion and the second arm portion. The stand member is made of rubber and disposed at an end of the second arm portion to provide friction between the second arm portion and contacting surface thereon and prevent the second arm portion from escaping as the display screen is in an upright position.

The supporting member further comprises a tube member pivotally secured to an end of the first arm portion to allow the supporting member to pivot on the connecting member.

A predetermined height of the supporting member ranges from the 0.8-fold to one-fold of the total length of an upright flat panel display and the connecting member attached therewith.

The second arm portion further comprises a plurality of screw holes for fastening the mounting apparatus to either a wall or a ceiling.

## BRIEF DESCRIPTION OF DRAWINGS

The following detailed description, given by way of an example and not intended to limit the invention to the embodiments described herein, will best be understood in conjunction with the accompanying drawings, in which:

FIG. 1 illustrates a perspective view according to a first preferred embodiment of the invention;

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FIG. 2 illustrates a side elevational view showing the operation of the first preferred embodiment of the invention;

FIG. 3 illustrates a side elevational view showing an alternative operation of the first preferred embodiment of the invention;

FIG. 4 a side elevational view showing another alternative operation of the first preferred embodiment of the invention;

FIG. 5 illustrates a perspective view according to a second preferred embodiment of the invention;

FIG. 6 illustrates a side elevational view showing the operation of the second preferred embodiment of the invention;

FIG. 7 illustrates a side elevational view showing an alternative operation of the second preferred embodiment of the invention;

FIG. 8 illustrates a side elevational view showing another alternative operation of the second preferred embodiment of the invention.

## DETAILED DESCRIPTION OF THE INVENTION

Two preferred embodiments of the present invention-flat panel display apparatus mounting apparatus are described below.

### First Embodiment

FIG. 1 illustrates a perspective view according to a first preferred embodiment of the invention. The flat panel display apparatus comprises a display screen 10, a handle member 11, a supporting member 13 and a stand member 15. There are various current flat panel display apparatuses such as liquid crystal display (LPP) panel, plasma display (PD) panel and field emission display. The handle member 11 is disposed at the edge 16 of the display screen 10. The handle member 11 has a U shape with two ends secured to the edge 16 of the display screen 10.

Referring to FIG. 2, the supporting member 13 has a first arm portion 131 and second arm portion 132. The first arm portion 131 and second arm portion 132 forms an obtuse angle. The first arm portion 131 is pivotally secured to the handle member 11. Securing means can be disposing a tube member 12 at an end of the first arm portion 131; thereby users can adjust the angle between the display screen 10 and supporting member 13. The stand member 15 covers the end of the second arm portion 132 of the supporting member 13. The second arm portion 132 has at least one hole 14.

According to the embodiment shown in the FIG. 1, users pivot the supporting member 13 to an appropriate angle to allow the display screen 10 to stand on the desk 21. The stand member 15 is used as a material to provide friction for the supporting member 13 against the desk 21, such that the supporting member 13 does not escape due to a large angle between the first arm portion 131 and second arm portion 132.

The stand member 15 is made of rubber. A predetermined height of the supporting member ranges from the 0.8-fold to one-fold of the total length of an upright flat panel display and the handle member attached therewith. The range is determined for maintaining the balance of the display screen 10 as it stands on the desk 21 with the supporting member 13.

FIG. 3 is an alternative application of mounting a flat panel display apparatus. In which, users pivot the supporting member 13 to an appropriate angle and followed that mount the supporting member 13 to the wall 31 with holes 14 on the supporting member 13 to support the display screen 10.